**Solubility**

-Solubility is the ability of a particle of one substance to move freely throughout the particles of another substance (usually a liquid). This means that a substance to be soluble in a liquid, the particles of that substance must be able to separate from each other and become surrounded by the particles of the liquid.

-Solubility means different things for different types of compounds. This is because of the way they are composed. The particles of an ionic compound would be all the ions composing the compound. So for an ionic compound to be soluble in a liquid, it must separate into its ions. For example, NaCl (sodium chloride) would split into Na+ cations and Cl- anions, and they would move freely throughout the particles of the liquid. In the case of covalent compounds, the particles are whole molecules. So for a covalent compound to be soluble in a liquid, individual molecules of the compound must be able to separate and move freely through a liquid. For example, a sugar cube (C6H12O6) would separate into individual sugar molecules.

-It is important to note when an ionic compound dissolves, the ionic “bond” is breaking. This means that the ions are going away from each other and the force between the (+) and (-) ions is interrupted. This process is called dissociation. When a covalent molecule dissolves, the covalent bonds are not breaking. This would be forming a new compound. What happens is that the individual molecules are being pulled apart and the smaller forces that keep them together are being interrupted.

